

PATENT COOPERATION TREATY

From Japanese Patent Office
(INTERNATIONAL SEARCH AUTHORITY)

To: HAYASE, Kenichi HAYASE & CO. 13F, NISSAY SHIN-OSAKA Bldg., 3-4-30, Miyahara, Yodogawa-ku, Osaka-shi, Osaka 532-0003 JAPAN	<p style="text-align: center;">PCT</p> <p style="text-align: center;">WRITTEN OPINION OF THE ISA (PCT Rule 43bis)</p> <hr/> Date of Mailing <p style="text-align: center;">7 December 2004</p>
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Applicant's or agent's file reference P33313-P0		See item 2 below for the subsequent procedure	
International application No. PCT/JP2004/012904	International filing date 31 August 2004	Priority date 22 September 2003	
International Patent Classification (IPC) or national classification and IPC Int. Cl. ⁷ H01L27/04, H01L21/82, H01L21/66			
Applicant <p style="text-align: center;">Matsushita Electric Industrial Co., Ltd.</p>			

1. This opinion contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 43.2.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

OMISSION(2 and 3)

Date of completion of this opinion <p style="text-align: center;">18 November 2004</p>
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Name and mailing address of the ISA/JP <p style="text-align: center;">Japanese Patent Office</p>	Authorized officer Telephone No.
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WRITTEN OPINION OF THE ISA

**International application No.
PCT/JP2004/012904**

I . Basis of the opinion

1. This opinion has been drawn on the basis of the language of international application, unless otherwise indicated below.

OMISSION(2, 3, and 4)

TRANSLATION of related part of Form PCT/ISA/237

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International application No.
PCT/JP2004/012904

V Reasoned statement under Rule 43,2.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. STATEMENT

Novelty (N)	Claims 1-4	YES
	Claims NONE	NO
Inventive Step(IS)	Claims NONE	YES
	Claims 1-4	NO
Industrial Applicability (IA)	Claims 1-4	YES
	Claims NONE	NO

2. CITATIONS AND EXPLANATIONS

Literature 1: JP 2003-124274 A (Matsushita Electric Industrial Co.,Ltd.), 2003.04.25, whole text, whole figures, & US 2003/0032263 A1, whole text, whole figures, & CN 1405867 A & KR 3014637 A & TW 558772 B

Literature 2: JP 7-37943 A (Tokyo Electron Co.,Ltd.), 1995.02.07, paragraph [0004]

Literature 3: JP 2002-22809 A (Seiko Epson Co.,Ltd.), 2002.01.23, paragraphs [0023]-[0026], figure 2

The invention relating to Claim 1 has no inventive step over the literatures 1 and 2 cited in the International Search Report. The literature 1 describes, in paragraphs [0041]-[0045] and figure 1(b), that probe pads 19, electrode pads 18, and wirings between the probe pads 19 are disposed in an area other than an area where the electrode pads 18 are disposed. Further, the literature 2 describes, in paragraph [0004], that bumps are used instead of probe needles, and therefore, it is easy for those skilled in the art to bring the bumps into contact with the probe pads 19.

The invention relating to Claim 2 has no inventive step over the literatures 1 and 2 and the literature 3 cited in the International Search Report. The literature 3 describes, in paragraphs [0023]-[0026], a technique of checking two pads using one probe needle when performing a probe test, and it is easy for those skilled in the art to use the techniques described in the literatures 1 and 3.

The invention relating to Claim 3 has no inventive step over the literatures 1-3. Referring to figure 1(b) of the literature 1, it is obvious that a wiring between an electrode pad 18 and a probe pad 19 has a bent portion.

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VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claim 2 is not sufficiently backed up by the specification. Relating to Claim 2, there is no concrete description in the specification as to which pads are connected to each other by a bump, and it is not clear as to whether merely adjacent pads are connected to each other by a bump.

TRANSLATION of related part of Form PCT/ISA/237

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Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of V.2.

The invention relating to Claim 4 has no inventive step over the literatures 1-3. The literature 1 describes, in paragraph [0048], that a cutting area 17b wherein a probe pad 19 is formed is removed by cutting.